

Amendments to the Claims

This listing of claims will replace the originally filed claims in the application.

Listing of Claims:

Claims 1 – 10 (cancelled)

Claim 11 (currently amended): A process for cryogenic heat exchange and the promotion of bubble nucleation utilizing a corrugated fin for plate-and-fin heat exchanger, of the type having a general main corrugated direction, and comprising a plurality of corrugations alternately linked by a corrugation peak and by a corrugation valley, wherein it is formed exclusively from sintered metal particles, wherein the particles are of aluminum, of an aluminum alloy containing at least about 90 mol% of aluminum, of copper, or of an alloy containing at least about 90 mol% of copper, said process comprising

- transferring heat, indirectly, between at least a first fluid and a second fluid by means of plate-and-fin heat exchanger, wherein the first fluid is predominantly in the vapor phase, and the second fluid is predominantly in the liquid phase, and
- promoting the nucleated boiling of the second phase by means of said sintered metal.

Claim 12 (currently amended): The process corrugated fin of claim 11, wherein the corrugation sides, the corrugation peaks and the corrugation valleys form straight segments, in cross section with respect to the main corrugation direction, the peaks and valleys being parallel to each other.

Claim 13 (cancelled):

Claim 14 (currently amended): The process corrugated fin of claim 11, wherein the fin has a thickness of between about 0.25 and about 0.6 mm.

Claim 15 (currently amended): The process corrugated fin of claim 11, in which the pores formed in the fin have a diameter of between about 10 and about 100 μm .

Claim 16 (currently amended): An evaporator/condenser, of the type comprising a stack of parallel plates, closure bars and, optionally, corrugated spacers, which define a

first series of passages for a fluid to be evaporated supplied at the source, and a second series of passages contiguous with the first for at least one fluid for heating said fluid to be evaporated, said passages of the first series being divided into three successive zones, from the bottom to the top, of the evaporator/condenser:

- a) a first zone configured to promote heat exchanges by convection;
- b) a second zone configured to promote nucleated boiling;
- c) a third zone configured to promote convective boiling;

wherein at least the second zone and, optionally, the third zone and even, optionally, the first zone, contains fins utilizing a process conforming to claim 11.

Claim 17 (previously presented): The evaporator/condenser of claim 16, wherein it is of the bath evaporator type.

Claim 18 (previously presented): An evaporator/condenser of the film evaporator type, containing fins conforming to claim 11.

Claim 19 (previously presented): A unit for separating air by cryogenic distillation, comprising at least one evaporator/condenser of claim 16.

Claim 20 (previously presented): The air separation units of claim 19, comprising at least two columns thermally coupled together via an evaporator.

Claim 21 (new): The evaporator/condenser of claim 16, wherein the first zone utilizes a process conforming to claim 11.

Claim 22 (new): The evaporator/condenser of claim 16, wherein the third zone utilizes a process conforming to claim 11.